Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 (cancelled)

Claim 6 (currently amended): A cell ~~line~~culture ~~produced according to the method of Claim 1~~comprising:

a neural precursor cell line, said cell line comprising a recombinant DNA construct comprising a receptor ligand-regulated *c-myc* gene, wherein at least about 20% of the cell line is capable of differentiating into neurons upon withdrawal of mitogen.

Claims 7-22 (cancelled)

Claim 23 (currently amended): A cell ~~line~~ culture comprising ~~of~~ mammalian neural precursor cells capable of differentiating into neurons and glia,

wherein the mammalian neural precursor cells ~~contain~~ comprise a recombinant DNA construct comprising a receptor ligand-regulated *c-myc* ~~construct~~ gene, and

wherein ~~the *c-myc* construct is comprised of a *c-myc* cDNA fused with at least one element selected from the group consisting of DNA for a ligand binding domain for an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor~~at least about 20% of said mammalian neural precursor cells are capable of differentiating into neurons upon withdrawal of mitogen.

Claim 24 (currently amended): The cell ~~line~~ culture of claim 23, wherein the mammalian neural precursor cells are derived from a human.

Claim 25 (currently amended): The cell ~~line~~ culture of claim 23, wherein the mammalian neural precursor cells are derived from ~~an in vitro a culture of~~ pluripotent embryonic stem cells.

Claim 26 (cancelled)

Claim 27 (cancelled)

Claim 28 (withdrawn): The cell ~~line~~ culture of claim 23, wherein the culture comprises cells that maintain a bipotential capacity to differentiate into astrocytes and oligodendrocytes.

Claim 29 (withdrawn): The cell ~~line~~ culture of claim 23, wherein the culture comprises cells that maintain a unipotential capacity to differentiate into neurons.

Claim 30 (withdrawn): The cell ~~line~~ culture of claim 23, wherein the culture comprises cells that maintain a unipotential capacity to differentiate into astrocytes.

Claim 31 (currently amended): ~~An in vitro stable~~ A cell culture comprising a cell line of mammalian neural precursor cells, produced by:

(a) ~~preparing a culture of neural precursor cells in a serum-free medium;~~

~~(b)~~ culturing the neural precursor cells in a serum-free medium and in the presence of a first mitogen, wherein said first mitogen is selected from the group consisting of aFGF, bFGF, EGF, TGFα and combinations thereof;

~~(c)~~(b) introducing a *c-myc* construct into the cells,

wherein the *c-myc* construct ~~is comprised of~~includes at least a portion of a *c-myc* ~~cDNA~~DNA fused with ~~at least one element selected from the group consisting of~~ DNA encoding at least a portion of ~~for~~ a ligand binding domain ~~for an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor~~; and

~~(d)~~(c) further culturing the cells in a medium containing the first mitogen and a second mitogen,

wherein said second mitogen is selected from the group consisting of aFGF, bFGF, EGF, TGFα, serum and combinations thereof, ~~with the proviso that that the second mitogen is other than the first mitogen,~~ and

wherein said medium containing the first mitogen and the second mitogen further comprises a *c-myc*-activating ~~chemical~~agent ~~selected from the group consisting of β-estradiol, RU38486, dexamethasone, thyroid hormones, retinoids, and ecdysone~~capable of binding to the ligand-binding domain.

Claim 32 (currently amended): The cell ~~line~~culture of claim 31, wherein the mammalian neural precursor cells are derived from a human.

Claim 33 (currently amended): The cell ~~line~~culture of claim 31, wherein the mammalian neural precursor cells are derived from ~~an in vitro culture of~~ pluripotent embryonic stem cells.

Claim 34 (currently amended): The cell ~~line~~culture of claim 31, wherein the cells maintain a multipotential capacity to differentiate into neurons~~, astrocytes~~ and ~~oligodendrocytes~~glia.

Claim 35 (currently amended): The cell ~~line~~culture of claim 31, wherein the cells maintain a bipotential capacity to differentiate into neurons and astrocytes.

Claim 36 (withdrawn): The cell ~~line~~culture of claim 31, wherein the culture comprises cells that maintain a bipotential capacity to differentiate into astrocytes and oligodendrocytes.

Claim 37 (withdrawn): The cell ~~line~~culture of claim 31, wherein the culture comprises cells that maintain a unipotential capacity to differentiate into neurons.

Claim 38 (withdrawn): The cell ~~line~~culture of claim 31, wherein the culture comprises cells that maintain a unipotential capacity to differentiate into astrocytes.

Claim 39 (new): The cell culture of Claim 31, wherein the culture includes a monolayer component.

Claim 40 (new): The cell culture of claim 31, wherein the second mitogen is different from the first mitogen.

Claim 41 (new): The cell culture of claim 31, wherein the neural precursor cells are derived from central nervous system tissue.

Claim 42 (new): The cell culture of claim 41, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, diencephalon, mesencephalon, hindbrain, and spinal cord

Claim 43 (new): The cell culture of claim 31, wherein the nuclear receptor is selected from the group of receptors consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor

Claim 44 (new): The cell culture of Claim 6, which includes a clonal cell culture.

Claim 45 (new): The cell culture of Claim 6, wherein the culture includes a monolayer component.

Claim 46 (new): The cell culture of Claim 23, which includes a clonal cell culture.

Claim 47 (new): The cell culture of Claim 23, wherein the culture includes a monolayer component.

Claim 48 (new): The cell culture of Claim 23, wherein the recombinant DNA construct includes a *c-myc* DNA fused with at least one element comprising DNA for a ligand binding domain of a nuclear receptor.

Claim 49 (new): The cell culture of Claim 48, wherein the nuclear receptor is selected from the group consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor

Claim 50 (new): The cell culture of claim 23, wherein the neural precursor cells are derived from central nervous system tissue selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, diencephalon, mesencephalon, hindbrain, and spinal cord.

Claim 51 (new): A method for producing a culture comprising a mammalian neural precursor cell line wherein at least about 20% of the cell line is capable of differentiating into neurons, comprising:

a) preparing a culture comprising at least one neural precursor cell in a medium including a first mitogen selected from the group consisting of aFGF, bFGF, EGF, TGFα and combinations thereof;

b) introducing into the cell in the medium including the first mitogen a recombinant DNA construct comprising a receptor ligand-regulated *c-myc* gene, wherein at least a portion of the *c-myc* DNA is fused with DNA encoding at least a portion of a ligand-binding domain of a nuclear receptor; and

c) culturing the cell including the *c-myc* construct in a medium containing the first mitogen and a second mitogen,

wherein said second mitogen is selected from the group consisting of aFGF, bFGF, EGF, TGFα, serum and combinations thereof, and

wherein said medium containing the first mitogen and the second mitogen further comprises a *c-myc*-activating agent capable of binding to the ligand-binding domain.

Claim 52 (new): The method of Claim 51, wherein the neural precursor cell is derived from a human.

Claim 53 (new): The method of Claim 52, wherein the neural precursor cell is derived from an adult human.

Claim 54 (new): The method of claim 51, wherein the neural precursor cell is derived from pluripotent embryonic stem cells.

Claim 55 (new): The method of claim 51, wherein the neural precursor cell is derived from central nervous system tissue.

Claim 56 (new): The method of claim 51, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, diencephalon, mesencephalon, hindbrain, and spinal cord.

Claim 57 (new): The method of Claim 51, wherein the culture includes a monolayer culture.

Claim 58 (new): The method of claim 51, wherein the second mitogen is different from the first mitogen.

Claim 59 (new): The method of claim 51, wherein the nuclear receptor is selected from the group consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor.

Claim 60 (new): The method of claim 51, wherein the *c-myc*-activating agent is selected from the group consisting of β-estradiol, RU38486, dexamethasone, thyroid hormones, retinoids, and ecdysone.

Claim 61 (new): The method of Claim 51, further comprising introducing a selectable marker into the neural precursor cell.

Claim 62 (new): The method of Claim 51, further comprising culturing the neural precursor cell in the presence of unmodified cells.

Claim 63 (new): The method of Claim 62, wherein the unmodified cells are selected from the group consisting of unmodified primary stem cells, immature glial cells, mature astrocytes, fibroblasts, neurons and mitotically-inhibited cells.

Claim 64 (new): A method of obtaining a culture comprising a neural precursor cell line of a mammal capable of expanding through at least thirty cell doublings and wherein at least about 20% of the cell line is capable of differentiating into neurons comprising:

a) preparing a culture comprising at least one neural precursor cell, wherein said culture includes a first mitogen selected from the group consisting of aFGF, bFGF, EGF, TGFα and combinations thereof;

b) modifying said neural precursor cell to express a chimeric *c-myc* protein comprising a *c-myc* protein fused with at least one nuclear receptor protein; and

c) culturing the modified cells in a medium comprising the first mitogen and a myc-activating agent.

Claim 65 (new): The method of claim 64, wherein the neural precursor cell line includes a neural stem cell line.

Claim 66 (new): The method of claim 64, wherein the neural precursor cell is derived from central nervous system tissue.

Claim 67 (new): The method of claim 66, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, diencephalon, mesencephalon, hindbrain, and spinal cord.

Claim 68 (new): The method of Claim 64, wherein the culture includes a monolayer component.

Claim 69 (new): The method of Claim 64, wherein the nuclear receptor protein is selected from the group consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor

Claim 70 (new): The method of Claim 64, wherein the myc-activating agent is selected from the group consisting of β-estradiol, RU38486, dexamethasone, thyroid hormones, retinoids, and ecdysone.

Claim 71 (new): The method of Claim 64, which includes withdrawing the first mitogen and the myc-activating agent to initiate differentiation of the expanded culture of neural precursor cells.

Claim 72 (new): A cell culture comprising:

at least one neural precursor cell of a mammal, wherein said cell:

(a) is transfected with a proto-oncogene;

(b) maintains the multipotential capacity to differentiate into a neuron or glia through at least thirty cell doublings of said cell; and

(c) differentiates into a neuron or glia upon withdrawal of a mitogen.

Claim 73 (new): The cell culture of Claim 72, which includes a clonal cell culture.

Claim 74 (new): The cell culture of Claim 72, wherein the neural precursor cell is a neural stem cell.

Claim 75 (new): The cell culture of claim 72, wherein the cell is derived from central nervous system tissue.

Claim 76 (new): The neural precursor cell culture of claim 75, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, diencephalon, mesencephalon, hindbrain, and spinal cord

Claim 77 (new): The cell culture of Claim 72, wherein the proto-oncogene includes at least a portion of *c-myc*.

Claim 78 (new): The cell culture of Claim 72, wherein the cell differentiates into a neuron, said neuron having a gamma amino butyric acid (GABA)-positive phenotype.

Claim 79 (new): The cell culture of Claim 72, wherein the cell differentiates into a neuron, said neuron having a calretinin-positive phenotype.

Claim 80 (new): The cell culture of Claim 72, wherein the cell differentiates into a neuron, said neuron having a tyrosine hydroxylase-positive dopaminergic phenotype.